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MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER

GREENE, JASON M

ART UNIT PAPER NUMBER

1724

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/757,924

Applicant(s)

CHUNG ET AL.

Examiner

Jason M. Greene

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 190-197, 199-208, 220-238 and 247-278 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 247-254 and 271-278 is/are allowed.
- 6) ☒ Claim(s) 190-197, 199-208, 220-238 and 255-270 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

Terminal Disclaimer

1. The terminal disclaimer filed on 21 July 2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent Nos. 6,743,273 or 6,924,028 or any patent granted on U.S. Patent Application Nos. 10/676,189; 10/676,239; 10/676,185 or 10/894,898 has been reviewed and is accepted. The terminal disclaimer has been recorded.

However, the Examiner notes that the disclaimed patents and applications are not the patents applied in the obviousness-type double patenting rejection's presented in the previous Office action. Specifically, the terminal disclaimer fails to disclaim U.S. Patent Nos. 6,716,274 and 6,673,136. Accordingly, the obviousness-type double patenting rejections have not been overcome by the terminal disclaimer filed on 21 July 2005.

Response to Arguments

2. Applicant's arguments, see page 12, lines 13-22, filed 21 July 2005, with respect to the 35 USC 102(e) rejection of claims 190-197 have been fully considered and are

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persuasive. The 35 USC 102(e) rejection of claims 190-197 has been withdrawn.

Specifically, the Examiner agrees with Applicants that Emig et al. fails to teach or suggest the filter media of claim 190 wherein the polymer comprises a reaction product of a polyvinyl alcohol and a crosslinking agent.

3. Applicant's arguments, see page 12, line 28 to page 13, line 7, filed 21 July 2005, with respect to the 35 USC 103(a) rejection of claims 201-208 have been fully considered and are persuasive. The 35 USC 103(a) rejection of claims 201-208 has been withdrawn.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 220, 222, 227, 228, 263-270 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12

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of U.S. Patent No. 6,716,274 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other.

With regard to claims 220, 222, 263-265, 269 and 270, claim 10 of U.S. Patent No. 6,716,274 B2 claims a filter media comprising a fine fiber layer and a substrate having a basis weight not greater than 200 g/m^2 , the fine fiber comprising the reaction product of a polyvinyl alcohol and a cross linking agent, the fiber having a fiber size of 0.01 to 0.5 microns, the fine fiber layer having a thickness of 1-8 times the fine fiber diameter, the substrate comprising a filtration media, wherein after exposure to air at 140°F and 100 percent relative humidity for 16 hours greater than 30 percent of the fiber remains substantially unchanged. Since the fine fiber layer has a thickness of only 1-8 times the diameter of the fine fiber, the basis weight of the fine fiber layer will inherently be less than 24 gm/m^2 .

While claim 10 of U.S. Patent No. 6,716,274 B2 is directed to an air filter assembly comprising the claimed filtration media, one of ordinary skill in the art would have recognized that the filtration media could have been separately used in different filter assemblies.

The instantly claimed ranges for the substrate basis weight and the percentage of fiber survival are seen as lying within the ranges disclosed in the '274 patent. Therefore, a prima facie case of obviousness exists which must be overcome through a showing of unexpected or unobvious results.

With regard to claims 227, 228 and 266-268, claims 10-12 of U.S. Patent No. 6,716,274 B2 recite the crosslinking agent comprising polyacrylic acid and melamine formaldehyde and the fine fiber comprising 1-40 wt% of the crosslinking agent.

6. Claims 190, 192-197, 199, 200 and 223-226 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 6,716,274 B2 in view of Kahlbaugh et al. '399.

With regard to claims 190, 192-197 and 223-226, Claim 10 of U.S. Patent No. 6,716,274 B2 claims a filter media comprising a fine fiber layer and a substrate having a basis weight not greater than 200 g/m^2 , the fine fiber comprising the reaction product of a polyvinyl alcohol and a cross linking agent, the fiber having a fiber size of 0.01 to 0.5 microns, the fine fiber layer having a thickness of 1-8 times the fine fiber diameter, the substrate comprising a filtration media, wherein after exposure to air at 140°F and 100 percent relative humidity for 16 hours greater than 30 percent of the fiber remains substantially unchanged. Since the fine fiber layer has a thickness of only 1-8 times the diameter of the fine fiber, the basis weight of the fine fiber layer will inherently be less than 24 gm/m^2 .

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the substrate comprising a woven or non-woven fabric.

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Kahlbaugh et al. '399 discloses a similar filter media wherein the substrate comprises a spunbonded (melt blown) nonwoven polymeric (polyester) fabric in col. 15, line 55 to col. 16, line 64.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the spunbonded nonwoven polymeric (polyester) fabric of Kahlbaugh et al. '399 into the substrate of Claim 10 of U.S. Patent No. 6,716,274 B2 to provide a substrate material that is sufficiently strong and tough to withstand manipulations during manufacture and handling and to survive operating conditions, as suggested by Kahlbaugh et al. '399 in col. 15, lines 37-42.

With regard to claims 199 and 200, claims 10-12 of U.S. Patent No. 6,716,274 B2 recite the crosslinking agent comprising polyacrylic acid and melamine formaldehyde and the fine fiber comprising 1-40 wt% of the crosslinking agent.

7. Claims 191 and 221 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 6,716,274 B2 and Kahlbaugh et al. '399 as applied to claim 190 above, and further in view of claim 9 of U.S. Patent No. 6,673,136 B2.

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the fine fiber comprising the reaction product of a blend of two polymer resins and a cross linking agent.

Claim 9 of U.S. Patent No. 6,673,136 B2 claims a similar filter media comprising a fine fiber comprising the reaction product of a copolymer comprising polyvinylalcohol and a cross linking agent.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the crosslinked copolymer of claim 9 of U.S. Patent No. 6,673,136 B2 into the fine fibers of claim 10 of U.S. Patent No. 6,716,274 B2 to provide a filter media capable of performing in a specific environment.

8. Claims 229, 231, 232, 237 and 238 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,716,274 B2 in view of Dzenis et al.

With regard to claims 229, 231 and 232, claim 10 of U.S. Patent No. 6,716,274 B2 claims a filter media comprising a fine fiber layer and a substrate having a basis weight not greater than 200 g/m^2 , the fine fiber comprising the reaction product of a polymer resin (polyvinyl alcohol) and a cross linking agent, the fiber having a fiber size of 0.01 to 0.5 microns, the substrate comprising a filtration media, wherein after exposure to air at 140°F and 100 percent relative humidity for 16 hours greater than 30 percent of the fiber remains substantially unchanged. Since the fine fiber layer has a thickness of only 1-8 times the diameter of the fine fiber, the basis weight of the fine fiber layer will inherently be less than 24 gm/m^2 .

While claim 10 of U.S. Patent No. 6,716,274 B2 is directed to an air filter assembly comprising the claimed filtration media, one of ordinary skill in the art would have recognized that the filtration media could have been separately used in different filter assemblies.

The instantly claimed ranges for the substrate basis weight and the percentage of fiber survival are seen as lying within the ranges disclosed in the '274 patent. Therefore, a prima facie case of obviousness exists which must be overcome through a showing of unexpected or unobvious results.

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the fine fibers being electrospun.

Dzenis et al. teaches electrospun fine fibers having diameters between 5 and 5000 nm (0.005 and 5.0 microns) in col. 8, line 18 to col. 9, line 38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the electrospun fine fiber forming process of Dzenis et al. into the filter media of claim 10 of U.S. Patent No. 6,716,274 B2 to provide fine fibers capable of performing in a specific environment.

With regard to claims 237 and 238, claims 11 and 12 of U.S. Patent No. 6,716,274 B2 claims the crosslinking agent comprising polyacrylic acid and melamine formaldehyde.

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9. Claim 230 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 6,716,274 B2 and Dzenis et al. as applied to claim 229 above, and further in view of claim 9 of U.S. Patent No. 6,673,136 B2.

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the fine fiber comprising the reaction product of a blend of two polymer resins and a cross linking agent.

Claim 9 of U.S. Patent No. 6,673,136 B2 claims a similar filter media comprising a fine fiber comprising the reaction product of a copolymer comprising polyvinylalcohol and a cross linking agent.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the crosslinked copolymer of claim 9 of U.S. Patent No. 6,673,136 B2 into the fine fibers of claim 10 of U.S. Patent No. 6,716,274 B2 to provide a filter media capable of performing in a specific environment.

10. Claims 233-236 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,716,274 B2 and Dzenis et al. as applied to claim 229 above, and further in view of Kahlbaugh et al. '399

Claims 10-12 of U.S. Patent No. 6,716,274 B2 does not claim the specific substrate material.

Kahlbaugh et al. '399 discloses a similar filter media wherein the substrate comprises a spunbonded nonwoven polymeric (polyester) fabric in col. 15, line 55 to col. 16, line 64.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the spunbonded nonwoven polymeric (polyester) fabric of Kahlbaugh et al. '399 into the substrate of Claim 10 of U.S. Patent No. 6,716,274 B2 to provide a substrate material that is sufficiently strong and tough to withstand manipulations during manufacture and handling and to survive operating conditions, as suggested by Kahlbaugh et al. '399 in col. 15, lines 37-42.

11. Claims 201-204 and 255-262 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,716,274 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other.

With regard to claims 201-204, 255-257, 261 and 262, claim 36 of U.S. Patent No. 6,716,274 B2 claims a filter media comprising a fine fiber layer and a substrate having a basis weight not greater than 200 g/m^2 , the fine fiber comprising polyurethane polymer, a nylon copolymer, and a resinous additive comprising an oligomer having a molecular weight of 500-3000 and an aromatic character, the fiber having a fiber size of 0.01 to 0.5 microns, the fine fiber layer having a thickness of 1-8 times the fine fiber diameter, the substrate comprising a filtration media, wherein after exposure to air at

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140 °F and 100 percent relative humidity for 16 hours greater than 30 percent of the fiber remains substantially unchanged. Since the fine fiber layer has a thickness of only 1-8 times the diameter of the fine fiber, the basis weight of the fine fiber layer will inherently be less than 24 gm/m².

While claim 36 of U.S. Patent No. 6,716,274 B2 is directed to an air filter assembly comprising the claimed filtration media, one of ordinary skill in the art would have recognized that the filtration media could have been separately used in different filter assemblies.

The instantly claimed ranges for the substrate basis weight and the percentage of fiber survival are seen as lying within the ranges disclosed in the '274 patent. Therefore, a prima facie case of obviousness exists which must be overcome through a showing of unexpected or unobvious results.

With regard to claims 258-260, claims 10 and 26 of U.S. Patent No. 6,716,274 B2 claim the fine fiber comprising 1-40 wt% of the resinous additive and the resinous additive comprising an oligomer comprising tertiary butyl phenol.

12. Claims 205-208 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,716,274 B2 and Dzenis et al. as applied to claim 229 above, and further in view of Kahlbaugh et al. '399

Claim 36 of U.S. Patent No. 6,716,274 B2 does not claim the specific substrate material.

Kahlbaugh et al. '399 discloses a similar filter media wherein the substrate comprises a spunbonded nonwoven polymeric (polyester) fabric in col. 15, line 55 to col. 16, line 64.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the spunbonded nonwoven polymeric (polyester) fabric of Kahlbaugh et al. '399 into the substrate of Claim 36 of U.S. Patent No. 6,716,274 B2 to provide a substrate material that is sufficiently strong and tough to withstand manipulations during manufacture and handling and to survive operating conditions, as suggested by Kahlbaugh et al. '399 in col. 15, lines 37-42.

Allowable Subject Matter

13. Claims 247-254 and 271-278 are allowed.

14. The following is a statement of reasons for the indication of allowable subject matter:

With regard to claims 247-254, the prior art made of record does not teach or fairly suggest the filter media of claim 247 wherein the fine fiber layer comprises the reaction product of a polyurethane polymer and a crosslinking agent.

With regard to claims 271-278, the prior art made of record does not teach or fairly suggest the filter media of claim 271 wherein the fine fiber layer comprises the reaction product of a condensation polymer and a crosslinking agent.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Jason M. Greene
Examiner

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Jason M. Greene
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jmg

October 3, 2005